

# NURSING DIAGNOSES AND INTERVENTIONS FOR PATIENTS WITH GRAFT-VERSUS-HOST DISEASE SUBMITTED TO HEMATOPOIETIC STEM CELL TRANSPLANTATION

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**ABSTRACT:** The objective was to identify the main nursing diagnoses and interventions described by the North American Nursing Diagnosis Association and Nursing Intervention Classification for patients with graft-versus-host disease submitted to allogeneic hematopoietic stem cell transplantation. A descriptive and exploratory study with a quantitative approach was undertaken. Data were collected from 30 patients at a bone marrow transplantation service of a large private hospital in the city of São Paulo. Nine main diagnoses were identified, in accordance with the North American Nursing Diagnosis Association. Eleven nursing interventions were proposed, based on the Nursing Interventions Classification, besides 40 activities. The main diagnoses, outcomes and interventions/activities were considered, formulated for more than 50% of the study participants. This study permitted the identification and selection of nursing diagnoses and interventions, with their respective activities, to be applied in clinical practice, aiming to support the care process and knowledge about the nursing taxonomies.

**DESCRIPTORS:** Graft-versus-host disease; Bone marrow transplantation; Nursing processes.

## DIAGNÓSTICOS E INTERVENÇÕES DE ENFERMAGEM PARA PACIENTES COM DOENÇA ENXERTO-HOSPEDEIRO SUBMETIDOS A TRANSPLANTE DE CÉLULAS-TRONCO HEMATOPOIÉTICA

**RESUMO:** Objetivou-se identificar os principais diagnósticos e intervenções de enfermagem descritos pela *North American Nursing Diagnosis Association* e *Nursing Intervention Classification*, para pacientes com doença enxerto versus hospedeiro submetidos a transplante de células-tronco hematopoiéticas alogênicas. Realizou-se um estudo descritivo, exploratório, com abordagem quantitativa. Coletaram-se dados de 30 pacientes, em uma unidade de transplante de medula óssea, de um hospital privado de grande porte, localizado no município de São Paulo. Identificaram-se nove principais diagnósticos, segundo a *North American Nursing Diagnosis Association*. Propôs-se 11 intervenções de enfermagem baseadas na *Nursing Interventions Classification*, além de 40 atividades. Consideraram-se os principais diagnósticos, resultados e intervenções/atividades formulados para mais de 50% dos participantes do estudo. Este estudo permitiu identificar e selecionar diagnósticos e intervenções de enfermagem, com suas respectivas atividades, para aplicação na prática clínica, com vistas a subsidiar o processo de cuidado e o conhecimento das taxonomias de enfermagem.

**DESCRIPTORIOS:** Doença enxerto-hospedeiro; Transplante de medula óssea; Processos de Enfermagem.

## DIAGNÓSTICOS E INTERVENCIÓNES DE ENFERMERÍA PARA PACIENTES CON ENFERMEDAD INJERTO HOSPEDERO SOMETIDOS A TRASPLANTE DE CÉLULAS TRONCALES HEMATOPOYÉTICAS

**RESUMEN:** Fue la finalidad del estudio identificar los principales diagnósticos e intervenciones de enfermería descritos por la *North American Nursing Diagnosis Association* y *Nursing Intervention Classification*, para pacientes con enfermedad injerto contra hospedeiro sometidos a trasplante de células troncales hematopoyéticas alogénicas. Fue realizado un estudio descriptivo, exploratorio, con abordaje cuantitativo. Los datos fueron obtenidos de 30 pacientes, en una unidad de trasplante de médula ósea, de un gran hospital particular, ubicado en el municipio de São Paulo. Fueron identificados nueve principales diagnósticos, de acuerdo a *North American Nursing Diagnosis Association*. Se propuso 11 intervenciones de enfermería basadas en la *Nursing Interventions Classification*, además de 40 actividades. Fueron considerados los principales diagnósticos, resultados y intervenciones/actividades formulados para más de 50% de los participantes del estudio. Este estudio volvió posible identificar y seleccionar diagnósticos e intervenciones de enfermería, con sus respectivas actividades, para aplicación en la práctica clínica, a fin de subsidiar el proceso de cuidado y el conocimiento de las taxonomías de enfermería.

**DESCRIPTORIOS:** Enfermedad injerto hospedeiro; Trasplante de médula ósea; Procesos de Enfermería.

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## INTRODUCTION

Hematopoietic stem cell transplantation (HSCT) corresponds to the intravenous infusion of hematopoietic stem cells (HSC) to reestablish the spinal function. This procedure is recommended when the bone marrow suffers from a pathological process or whom the hematopoietic toxicity is limiting in the aggressive treatment of the disease, including radiotherapy, chemotherapy and/or immune therapy at toxic doses<sup>(1)</sup>. HSCT can be autogeneic, allogeneic and syngeneic. The transplantation modality is established according to the baseline disease and the patient's clinical and general condition<sup>(2-3)</sup>.

Autogeneic HSCT occurs when the hematopoietic stem cells (HSC) derive from the peripheral blood or bone marrow of the person who will be transplanted (receiver). Allogeneic HSCT occurs when the HSC come from the umbilical cord blood of another person (donor) or from the bone marrow of peripheral blood, which can be related, when the receiver and donor are blood-related, or not-related, when the receiver and donor are not blood-related. Syngeneic HSCT occurs when the HSC derive from the bone marrow of an identical twin sibling<sup>(2,4)</sup>.

The HSCT process is preceded by a conditioning regimen consisting of high doses of chemotherapeutic drugs and/or irradiance that can involve the entire body or lymph nodes, undertaken by the receiver, causing marrow, thus favoring the repopulation when the receiving bone marrow is received. The HSC infusion will stimulate an early repopulation process, using recombinant human granulocyte colony-stimulating factors or recombinant human granulocyte-macrophage colony-stimulating factors<sup>(5-6)</sup>.

Post-allogeneic HSCT complications derive from the toxicity of the drugs used in the bone marrow extraction and the medullary aplasia period, increasing the probability of bacterial, fungal and viral infections, deriving from the pancytopenia, besides baldness, sterility, nausea, vomiting, mucositis, diarrhea and graft-versus-host disease (GVHD)<sup>(6-7)</sup>.

Despite the documented progress, GVHD remains an important obstacle in allogeneic transplantations, partially hampering ongoing efforts to increase the number of eligible

candidates<sup>(7)</sup>. The result of the activation of the T lymphocyte from the donor by histocompatibility antigens from the host's tissues can lead to the disease due to immunological problems. The disease has two phases: acute and chronic, according to the duration, clinical and histopathological findings<sup>(6,8)</sup>.

It is classified as acute when it develops during the first 100 days after the autogeneic HSCT, clinically characterized by the triad: hepatitis (jaundice), rash and gastroenteritis (abdominal pain and diarrhea). Chronic HSCT is a syndrome that involves multiple organs and whose particularities are similar to those of autoimmune diseases and collagen. It commonly emerges 100 days after the HSCT. The incidence of neoplastic relapse drops as GVHD develops due to the known graft-versus-disease effect<sup>(8-9)</sup>. For the sake of prevention, the prophylaxis is based on corticoids, antimetabolites and immunosuppressive drugs, with a view to increasing the newly transplanted patients' survival<sup>(5,8)</sup>.

The clinical ranking of GVHD can range from degree I (mild), when the manifestations only affect the cutaneous tissues; degree II (moderate), when the patient presents generalized erythroderma, besides liver, intestinal and mild functional changes; degree III (severe), in case of peeling, blisters, pain, intestinal, liver and severe functional problems; and degree IV, when intense dermal, liver, intestinal and functional manifestations occur, including death risk. The highest mortality rates affect patients suffering from GVHD degrees III and IV<sup>(2-3)</sup>.

Nurses working at the HSCT sector need to provide care with particular responsibilities, knowledge and technical-scientific competences, as well as interpersonal relationship skills, besides promoting the education and orientation of patients submitted to this procedure and their relatives. The transplantation success fully depends on the team's training and on the education offered in all phases of the process<sup>(2)</sup>.

Thus, nursing's role can be expressive, aiming to act based on the identification of human reactions and on the establishment of strategies aimed at the recovery of health or the improvement of individual or collective wellbeing. Therefore, the nurses need to use tools like the Nursing Process (NP), which is a way to systemize the care delivered to the patient/family/

community, focused on comprehensive care and on professional-patient-family interaction<sup>(3,9)</sup>. The NP is based on clinical reasoning and involves five moments: investigation, nursing diagnosis (ND), planning, implementation and evaluation<sup>(10-11)</sup>.

The Brazilian Federal Nursing Council ruled on the Nursing Care Systemization (NCS), which presupposes the use of the NP. This should be implemented at all public and private health institutions<sup>(12)</sup>.

To achieve scientific status and respond to that need, the American Nurses Association (ANA) developed standardized languages, such as North American Nursing Diagnosis Association (NANDA-I)<sup>(13)</sup>, Nursing Outcomes Classification (NOC)<sup>(14)</sup> and Nursing Interventions Classification (NIC)<sup>(15)</sup>, aiming to define the nursing body of knowledge and assess its contribution to the quality and cost-benefit relation<sup>(9)</sup>.

In view of the complexity of the theme, the following question is raised: which are the main nursing diagnoses and interventions present in cancer patients submitted to allogeneic HSCT with GVHD?

This research is motivated by the fact that this theme has been hardly explored. When knowing the main nursing diagnoses and intervention, the nursing professionals can use the systemization in favor of the quality of nursing care. The lack of international and Brazilian publications involving allogeneic HSCT and the NP suggests the need to establish the main ND and nursing interventions/activities with a view to achieving better care for patients submitted to HSCT suffering from GVHD, allowing the nurses to identify the needs of the people they are responsible for.

Hence, the objective in this study was to identify the main nursing diagnoses and interventions described by the North American Nursing Diagnosis Association and Nursing Intervention Classification, for graft-versus-host disease submitted to allogeneic hematopoietic stem cell transplantation.

## METHOD

A quantitative, descriptive and exploratory study was undertaken at a bone marrow transplantation service of a large private institution located in the city of São Paulo, Brazil. Based on convenience

sampling, the selection criteria are patients submitted to allogeneic HSCT who developed GVHD at the service mentioned between April 2010 and March 2011, totaling 30 participants.

To collect the data, the first two authors elaborated a semistructured script, consisting of two parts: the first contained data on the participants' characteristics: sex, medical diagnosis, degree of parenthood of the donor, type and degree of GVHD; the second part contained an area to identify the nursing diagnoses and interventions/activities.

The data collection was based on secondary data sources, that is, the digital files of the patients submitted to allogeneic HSCT who developed GVHD were used. In the files, the history (investigation form), evolution and nursing notes were used, as these provide information on the requisites for the nursing actions provided, the developed of the health condition and aspects related to clinical data and diseases.

The research complied with the ethical premises for research involving human beings, according to National Health Council Resolution 466/12. Approval for the project was obtained from the Institutional Review Board (IRB) at Hospital Israelita Albert Einstein, São Paulo-SP, opinion 10/1315.

The data were treated in Epi Info version 7, using double entry to guarantee the consistency of the database. For analysis purposes, the software Statistical Package for Social Science (SPSS), version 20.0 was used, calculating absolute and relative frequencies to discover the frequency of the nursing diagnoses and interventions. The titles of the diagnoses and interventions/activities formulated for more than 50.0% of the study participants were considered.

The diagnoses and interventions/activities were confronted with the literature and assessed by three experts in the area, i.e. who had more than ten years of professional experience, held an M.Sc. or Ph.D., possessed publications in proceedings, books and/or indexed journals in the field of nursing diagnostics, outcomes and interventions in the last five years.

## RESULTS

To present the results, tables were elaborated and textual description, according to the data collected from 30 patients submitted to allogeneic

HSCT with GVHD. In the population, 17 individuals were female (57%) and ten (33%) were between 30 and 39 years of age. The mean age was 24.1 years.

Concerning the diagnosis, 21 interviewees (70%) presented a tumor, 23 (77%) received the bone marrow transplantation from a related donor and 24 (980%) suffered from acute GVHD. As regards the degree, 60% (n=18) of the patients showed GVHD degree II, 30% (n=9) degree I and 10% (n=3) with the disease in a more advanced phase with degree III.

Table 1 displays the most frequent Nursing Diagnosis (ND) based on the Taxonomy II of NANDA I and their respective defining characteristics, related and risk factors that supported their elaboration. It should be highlighted that, in this study, the use of the ND was considered as a work tool for use in the nurse's daily work, as it facilitates the process,

presents a specific nursing terminology and grants further autonomy.

Nine Nursing Diagnoses (ND) stood out. The most frequent diagnosis was Risk for Infection (100%) from the domain safety and protection, followed by Fatigue (domain activity and rest) and Anxiety (domain coping and stress tolerance), both with 90.0% (n=27).

Less frequent were Deficient fluid volume (domain nutrition) and diarrhea (domain elimination and exchange), both of which were present in 60% (n=18) of the patients.

In Table 2, the NIC Nursing Interventions of the study participants with GVHD post-allogeneic HSCT are displayed.

The following NIC nursing interventions stood out: infection control (100%), followed by energy control, anxiety reduction, music therapy and relaxation therapy with an incidence rate of 90.0% each.

Table 1 – Main nursing diagnoses of GVHD patients after allogeneic HSCT. São Paulo-SP-Brazil, 2011

Nursing Diagnoses	(n=30)	%
Domain 11 – Safety and Protection		
(00004) Risk for infection due to the use of immunosuppression, presence of invasive lines and procedures.	30	100
(00155) Risk for falls due to diarrhea, fatigue and unfamiliar room.	24	80
(00046) Impaired skin integrity as evidenced by peeling skin, maculopapular rash, generalized erythrodermia, related to the activation of the T lymphocyte and cytotoxicity.	21	70
Domain 4 – Activity and Rest		
(00093) Fatigue as evidenced by reports of constant fatigue, lack of energy and increased need for rest, related to anemia and state of illness.	27	90
Domain 9 – Coping and Stress Tolerance		
(00146) Anxiety as evidenced by reported anguish, concern, unease, nervousness related to the changed and threatening health condition.	27	90
Domain 12 – Comfort		
(00214) Impaired Comfort as evidenced by anxiety and lament, related to the lack of satisfaction with the signs and symptoms of GVHD.	26	87
Domain 2 - Nutrition		
(00002) Imbalanced nutrition: less than body requirements as evidenced by abdominal pain and weight loss with inappropriate food intake related to impaired capacity to absorb foods.	25	83
(00027) Deficient fluid volume as evidenced by decreased skin turgor, dry skin and weakness related to active loss of fluid volume due to diarrhea.	18	60
Domain 3 – Elimination and Exchange		
(00013) Diarrhea as evidenced by increased number of evacuations, more than thrice a day, liquid and greenish stools and abdominal pain related to inflammation of intestinal mucosa	18	60

Table 2 – Nursing Interventions and their respective activities for patients submitted to allogeneic HSCT with GVHD. São Paulo-SP-Brazil, 2011

<b>Nursing Interventions</b>	<b>(n=30)</b>	<b>%</b>
Controle de infecção (6540)	30	100
Teach hand washing/signs of infection: patient/visits./ Change intravenous accesses according to institutional protocol. / Monitor signs and symptoms of infection, including vital signs. / Monitor laboratory tests daily.		
Fall prevention (6490)	24	80
Advise patient/family on risks/Fall prevention. / Maintain bed rails and bell within the patient's reach. / Monitor while walking: balance and level of fatigue.		
Skin care: topical treatments (3584)	21	70
Monitor use of prescribed topical corticosteroids. / Advise on non-exposure to sun and daily use of sunscreen. / Avoid hot baths/keep skin hydrated. / Use cotton clothing, neutral soap. / Advise on environmental control and grooming.		
Energy control (0180)	27	90
Encourage expression of feelings about limitations. / Monitor fatigue according to standardized scales. / Encourage alternating periods of rest and exercises. / Advise on fatigue associated with GVHD and HSCT.		
Anxiety reduction (5820)	27	90
Create a relaxed and accepting atmosphere. / Listen actively and support patient's decision making.		
Relaxation therapy (6040)	27	90
Describe benefits of relaxation. / Demonstrate relaxation technique to the patient.		
Music therapy (4400)	27	90
Inform on the goal of the musical experience. / Choose songs that represent individual preferences.		
Self-Care assistance (1800)	26	87
Monitor self-care ability. / Encourage independence whenever possible.		
Nutrition therapy (1120)	25	83
Assess nutritional risk, in case of high risk inform dietician. / Monitor food and fluid intake.		
Teaching: prescribed diet (5614)	25	83
Assess the level of knowledge about the prescribed diet. / Advise that, in principle, the diet will be poor in fats and rich in carbohydrates.		
Diarrhea management (0460)	18	60
Monitor signs of dehydration. / Monitor episodes of diarrhea, as well as characteristics. / Encourage hydration, fractioned meals/small quantity. / Advise on the importance of safe preparation of foods.		

## DISCUSSION

In this research, female persons were predominant, with a mean age of 24.1 years, who received medulla from a related donor, similar to a study undertaken in Ribeirão Preto-SP, involving patients with chronic GVHD after allogeneic HSCT<sup>(16)</sup>.

As regards the main nursing diagnoses established, 22.2% are risk diagnoses and 77.8% actual diagnoses. This mapping was relevant as, in nursing care planning, initially, the diagnoses of already established problems need to be attended to, which are the human responses to the individual's health conditions. The risks need to be identified and preventive interventions need to be implemented. From that perspective,

nursing care should be planned to control risks, with a view to protecting the safety<sup>(17-19)</sup>.

Diagnoses were identified for the patients related to six domains of NANDA-I. Nevertheless, no diagnosis was found with an incidence rate superior to 50.0% for the patients with GVHD after allogeneic HSCT related to the following domains of human responses: Domain 6-Self-Perception; Domain 7-Role Relationships; Domain 8-Sexuality; Domain 10-Life Principles; Domain 13-Growth and Development; Domain 1- Health Promotion and Domain 5- Perception and Cognition.

The domain Safety/Protection stood out due to the high incidence of nursing diagnoses the study participants presented. This domain refers to the person being free from threats, physical

injury or immune system problems, preservation against damage and protection, safety and free from danger<sup>(13)</sup>, probably due to the fact that acute GVHD initially appears as an itchy or painful skin eruption, general rash and peeling. Thus, the patient's skin integrity is impaired.

The ND Risk for Infection is the most present in hospitalized patients, due to different factors in the hospitalization process, demanding a preventive attitude that should guide the nursing actions in the care plan, taking into account its interconnection with other ND<sup>(10)</sup>. Infection prevention and control demand technical and behavioral measures, affecting the quality of health and the consequent reduction of efforts, problems, complications and costs<sup>(17)</sup>. In this study, besides the disease, 70.0% of the patients presented skin injuries, immunosuppressing medication therapy, besides the presence of lines and invasive procedures.

The Risk of falls was detected in 80% of the patients, which is conceived as increased susceptibility to falls that can cause physical damage. It was related to fatigue, diarrhea and being in an unfamiliar room.

In the Activity/Rest domain, the ND Fatigue was found in 90% of the patients, characterized by reports of constant fatigue, increased need for rest, lack of energy; related to anemia and the disease condition, as 60% of the subjects suffered from GVHD degree II, which already causes functional changes, and 10% suffered from the most advanced disease, ranked as degree III. Fatigue is considered as the situation of individuals undergoing HSCT and is a common sign and symptom for these patients, but it hardly valued and considered an expected and acceptable effect in people with malign tumors. In addition, subjective experience reports are found about generalized fatigue, weakness, exhaustion and lack of energy, related to prolonged stress<sup>(20)</sup>.

Concerning the domain Coping/Stress Tolerance, the ND Anxiety (90%) is understood as an uncomfortable feeling of discomfort or fear; feeling of apprehension motivated by the anticipation of danger<sup>(13)</sup>. The main factors identified were threat and change in the health condition. Studies appoint that several characteristics of HSCT can affect the mental and physical balance, leading to anxiety, such

as limitations in daily activities, treatment effects such as GVHD, and even a loss of self-esteem<sup>(18-20)</sup>.

In the domain Comfort, the diagnosis of Impaired Comfort was identified in 87% of the patients. The problem is defined as the perceived lack of feelings of comfort, relief and transcendence in the physical, psychospiritual, environmental, cultural and social dimensions<sup>(13)</sup>. In this study, anxiety and lament were evidenced, related to the lack of satisfaction with the signs and symptoms of GVHD. The patients' comfort was considered fundamental for their recovery, as it can be understood as physical and mental wellbeing. The understanding of comfort combines calmness, which means tranquility or satisfaction, relief for not feeling discomfort, and transcendence, which is the stage of overcoming the pain<sup>(18)</sup>.

In the Nutrition domain, Imbalanced Nutrition: less than body requirements was perceived in 83% of the cases, as evidenced by the abdominal pain and weight loss with inappropriate food intake, related to the impaired ability to absorb foods. The ND deficient fluid volume was detected in 60% of the patients, characterized by decreased skin turgor, dry skin and weakness, related to the active loss of fluid volume due to the diarrhea. According to the literature, approximately 20% of the patients who receive allogeneic HSCT can present dyspepsia and anorexia, without diarrhea<sup>(5)</sup>. This can be one of the causes for the more frequent occurrence of the ND Imbalanced Nutrition: less than body requirements than the ND Deficient fluid volume, which is directly related to diarrhea.

In the domain Elimination and Exchange, the ND Diarrhea was verified in 60% of the patients, due to the increased number of evacuations, more than three times per day, liquid and greenish stools and abdominal pain related to the inflammation of the intestinal mucosa. The acute GVHD, found in 80% of the patients, can compromise the lean intestine and the distal colon, resulting in diarrhea, abdominal pain and intestinal bleeding. In this case, the diarrhea is characteristically greenish, watery and mucoid, and can persist despite the cessation of oral intake. The diarrhea and limited fluid intake can provoke severe electrolyte anomalies<sup>(5,7)</sup>.

The participants received comprehensive nursing interventions, justified by the range and complexity of the GVHD. In total, based on the NIC<sup>(15)</sup>, 40 activities took place for the GVHD patients post-HSCT, based on 11 nursing interventions, with infection control corresponding to 100%. The following activities stood out: teaching appropriate hand washing and signs of infection to the patient/visits; changing intravenous accesses according to the institutional protocol; monitoring laboratory tests, signs and symptoms of infection, including vital signs.

For the intervention Energy Control (90%), the activities included: encouraging the patient to express feelings about the limitations; monitoring fatigue using standardized scales, like the numerical analogue scale; encouraging alternating periods of rest and exercising and advising about the fatigue associated with GVHD and HSCT.

Studies appoint that the perceived fatigue can be reduced when the patient receives proper orientations, including information that mention the fatigue as a normal symptom in the treatment of transplanted patients, instead of a sign of disease progression<sup>(18,20-21)</sup>.

In fact, the education, exercise and activities developed to restore the energy, such as relaxation and leisure activities, are considered as evidences of intervention in the HSCT-related fatigue. The nurses are in an ideal position to advise on actions to relieve it<sup>(20-21)</sup>.

The following activities were listed with regard to the nursing intervention to reduce anxiety (90%): create a relaxed atmosphere of acceptance, listening actively, supporting the patient's decision making. The study appoints that there are two ways to reduce the anxiety, which are: solving the problem soon and overcoming the obstacles by coping with the situation, and fleeing from the threat and attempting to create defense strategies, with a view to minimizing the impact of the disease<sup>(20)</sup>.

As regards the intervention Relaxation Therapy (90%), describing the benefits of relaxation and demonstrating the relaxation technique to the patient stood out. To support the practice of relaxation, the intervention Music Therapy was suggested, which involves informing the patient about the goal of the

musical experience and choosing songs that represent personal preferences.

The analysis of some studies proves the association between the knowledge and practices of using music for health, including medical practices associated with the musical experiences, causing physiological effects that involve the release of adrenalin, regulation of breathing frequency, metabolic changes, blood pressure variations, reduction of fatigue and increased threshold of sensory stimuli. Attention and concentration improve. This method can be used as a complementary therapeutic resource in symptom management and control, including the symptoms deriving from the HSCT treatment<sup>(21)</sup>.

The nursing interventions with frequencies inferior to 90% were Fall Prevention (80%), Self-Care Assistance (87%), Nutrition Therapy and Teaching of Prescribed Diet, both with 83%; Skin Care and Topical Treatments (70%), and Diarrhea Management with 60%.

The study limitations should be highlighted as, despite covering the nursing diagnoses and interventions for GVHD patients after HSCT, this is not an absolute reality for all patients with graft-versus-host disease. The unpredictability of the course of care for individuals as unique beings in the universe can entails other impositions and conflicts, which the nursing professionals need to take into account and assess. Another limitation is the small sample size. As only one hospital was included, it is difficult to generalize the research results.

## CONCLUSION

The identification of the ND and nursing interventions based on this study provided new knowledge on the care for transplanted patients with GVHD, as well as about range of the systemized nursing practice for the authors and nursing professionals in the hospital where the study was undertaken, as the results were presented during a nursing team meeting.

In addition, the collected clinical data, using the terminologies classified in NANDA I and NIC, can provide information for the oncology nursing specialty area, and support the development of

parameters for nursing practice in care delivery to GVHD patients.

Thus, as shown, the patients' needs can be attended to without cost, using attention and dialogue only, as most stressors have psychological and social roots. One of the challenges for nurses is to deliver humanized care to the transplanted patients with GVHD focused on attention and dialogue, based on an appropriate scientific method.

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